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*Remarks on weighted categories and the non-symmetric
Pompeiu-Hausdorff-Gromov metric*

Lawvere [1] leaves “as an exercise for the reader to define a closed category $\mathcal{S}(\mathbf{R})$ such that ‘normed categories’ are just $\mathcal{S}(\mathbf{R})$ -valued categories and a ‘closed functor’ $\text{inf}: \mathcal{S}(\mathbf{R}) \rightarrow \mathbf{R}$ which induces the passage from any ‘normed category’ to a metric space with the same objects”. To some extent the authors of [3] elaborate on this “exercise” in their study of the Pompeiu-Hausdorff-Gromov metric, employing the term “weighted” rather than “normed”. Modifying the definition of the quantale-valued P-H-G-structures used in [2], in this talk we extend the studies of [3], by trading the Lawvere quantale \mathbf{R} (the non-negative extended real line with its addition) for a commutative quantale, and by discussing potential applications beyond the metric context. We also refer to [4] for further discussion of non-symmetric distances.

REFERENCES:

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